

Remarks

Claims 1-38 were examined. The proposed amendments are presented to address the rejections issued in the Final Office Action. The amendments raise no new issues, add no new matter and require no additional searching. It is noted that the subject matter of all of the amendments has previously appeared in the claims heretofore. For example, the amendment of claim 1 requires:

[A]rranging an electronics package in the portable locator for monitoring operator actuations of the portable locator (i) to detect a predetermined operator actuation for use in controlling the ground marking arrangement, (ii) to detect other operator actuations for use in controlling the locating arrangement and (iii) to, upon detecting the predetermined operator actuation, initiate marking by the ground marking arrangement.

What exactly
is this
saying?

These amended features appeared previously in independent claim 31, as well as dependent claim 23 (now canceled). Even if the Examiner does not believe that the amendments place the application in condition for allowance, it is respectfully requested that the amendments be entered, as they would simplify issues for appeal. Claim 18 has been canceled in view of the amendment to claim 17; claim 23 has been canceled with its limitations now seen in amended claim 20; claim 35 has been canceled with its limitations now present in amended claim 34; and claim 38 has been canceled in view of the amendment to claim 1. Applicants appreciate the Examiner's comments.

The Rejections under 35 U.S.C. § 103

The Examiner rejected Claims 1-38 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,294,022 issued to Eslambolchi et al. (hereinafter the '022 patent) in view of U.S. Patent No. 4,387,340 issued to Peterman and further in view of U.S. Patent No. 6,064,940 issued to Rodgers et al. (hereinafter Rodgers). Applicant respectfully disagrees and submits that each of these claims, as amended, overcome the art of record.

Initially considering amended claim 1, limitations have been added to this claim that are reflected by the limitations of original claim 31. In particular, amended claim 1 recites configuring a portable locator that is used for locating at least one of a buried line and a boring tool to integrally support a marking arrangement for use by an operator in selectively marking the surface of the ground. The locating arrangement is supported in one operating position in relation to the marking arrangement in another operating position. An electronics package is arranged in the portable locator for monitoring operator actuations of the portable locator (i) to detect a predetermined operator actuation for use

in controlling the ground marking arrangement, (ii) to detect other operator actuations for use in controlling the locating arrangement and (iii) to, upon detecting the predetermined operator actuation, initiate marking by the ground marking arrangement.

The Examiner admits that there is no teaching in the '022 patent relating to locating. The Examiner attempts to justify the combination of references by stating:

Therefore, to use the method of Peterson to locate buried cables would be more accurate than the lack of method taught by Eslambolchi. This benefit flows naturally from the references. Since Eslambolchi provides no means for locating the cable in which it desires to mark [sic], one would obviously look for a way in which this would be done.

*not convincing
justification of
task.*

Applicant respectfully disagrees. This passage is considered by Applicants to take the '022 patent as providing an affirmative teaching as part of the basis of the combination, when the '022 patent teaches nothing in this regard. Applicants are unaware of any standard under § 103 which provides, as an appropriate basis of rejection, that an Applicant would "obviously look" for a way to accomplish some step that is not even suggested by the art itself. It is submitted that this implicitly requires an impermissible 20/20 hindsight view of the prior art. Moreover, reliance on a reference for what it fails to teach is clearly an improper basis for a combination under § 103. It is not clear to Applicants how such a benefit can flow naturally from these references when the combination is only supported by the Examiner's inference, rather than being suggested by the references themselves.

The Examiner explains the contribution of the Rodgers reference to the overall combination by stating that:

The Examiner has used Rodgers as providing that it is known, and obvious, to combine devices of marking (Eslambolchi) with devices of locating (Peterson). Although Rodgers teaches locating means that do not detect underground cables, the benefits of combining marking and locating devices are still realized.

Applicants respectfully disagree in light of the amendments made in claim 1. In particular, Applicants find no teaching or reasonable suggestion in Rodgers or in the remaining art of record, of an electronics package in a portable locator for monitoring operator actuations of the portable locator (i) to detect a predetermined operator actuation for use in controlling the ground marking arrangement, (ii) to detect other operator actuations for use in controlling the locating

det. to put into motion of action

arrangement and (iii) to, upon detecting the predetermined operator actuation, initiate marking by the ground marking arrangement. Rodgers not only fails to teach these limitations, but leads one in an opposite direction by teaching that it is advantageous to provide a marking arrangement which is not controlled by an operator. In particular, the Rodgers marking arrangement is automatically controlled directly responsive to its position in the plotting region. The spirit of the Rodgers patent, when considered as a whole, resides in producing an accurate plot responsive to a map by limiting any influence on this process caused by an error-prone operator. In this light, Applicants would have no motivation to practice the method of amended claim 1 in view of Rodgers. Accordingly, it is submitted that claim 1 is allowable over the art of record, in any reasonable combination, for these reasons standing alone.

Still considering the patentability of claim 1, the Examiner cites case law including Nerwin v. Erlichman, In re Wolfe, and In re Howard as holding that making separate elements integral is obvious. Applicants respectfully disagree. After review of the latter two cases, Applicants consider that these holdings relate to combining separate elements of a pre-existing device. For example, In re Wolfe considers an integrally formed handle that was previously formed using two separate pieces. In order for this case law to be applicable, the elements to be integrated must already be present in a single pre-existing device. That is clearly not the case with respect to claim 1 in view of the art of record. Accordingly, Applicants respectfully request withdrawal of the rejection of claim 1 which relies in any respect on the subject case law.

With respect to the additional limitations presently in claim 1 and previously presented in numerous claims, including claim 31, Applicants submit that Petersen and the '022 patent are clearly devoid of any reasonably related teachings. Specifically, these limitations encompass using the electronics package to distinguish operator actuations of the portable locator for controlling the locating arrangement from a predetermined operator actuation which initiates marking. In attempting to meet these limitations as earlier presented in claim 31, the Examiner appears to refer to LCD display 22 of Rodgers by equating the mere display of operational status as being equivalent to monitoring operator interactions. Applicants respectfully disagree. It is noted that the description in Rodgers is specifically limited to display of operational status. In contrast, the operator of the apparatus of the present invention actually determines the operation of the apparatus to establish process outcome. As one example, the operator, in practicing the method of the present invention, initiates ground marking. As another example, the operator determines the use of the locating mode by issuing appropriate locating commands that are recognized by the electronics package.

*(Using Rodgers a lot
heavier than
is needed...
either may still work.
Starts from
initialization*

Applicants are unable to find any teaching or suggestion in Rodgers which would lead one to believe that an operator could provide a command or control input to the Rodgers apparatus which would result in altering the ground marking outcome, either through influencing either the locating portion or marking portion of the Rodgers apparatus. In particular, the operator does not appear to be able to issue a command which would cause the device to mark, in a manner that is irrespective of the map being plotted. The operator is only able to select which specific operational parameter is displayed. This is analogous to the dashboard computer in many modern automobiles whereby pressing a "mode" button may produce, for example, an alternating display of fuel economy, travel range based on remaining fuel and total amount of fuel consumed. No matter how many times the automobile operator depresses the mode button, the actual operation of the automobile is completely unaffected, save for which parameter is displayed. Again, the spirit of Rodgers is to eliminate and avoid operator dependent control of its ground marking process so as to avoid plotting errors. For this reason standing alone, Applicants submit that Rodgers provides no motivation to combine Peterman and the '022 patent to include an electronics package which functions in the recited manner. For all of these reasons, allowance of claim 1 is respectfully requested.

Dependent Claims 2-14, as amended, are each either directly or indirectly dependent from and therefore include the limitations of Claim 1. Accordingly, it is respectfully submitted that each of these claims is also patentable over the art of record for at least the reasons set forth above with respect to Claim 1. Further, each of these dependent claims places additional limitations on their parent and intermediate claims which, when considered in light of Claim 1, further distinguish the claimed invention from the art of record.

For example, claim 5 recites that the marking arrangement is configured for finger actuation by the operator.

As still another example, claim 6 recites that the marking arrangement is configured for foot actuation by the operator.

As a continuing example, claim 9 recites the use of an electrical actuation arrangement that is responsive to the electronics package to cause emission of the aerosol paint in response to a finger actuation by an operator.

As another example, Claim 10 recites the use of a solenoid as part of the electrical actuation arrangement to produce emission of the paint. Claim 13 further recites interfacing the electronics package with the solenoid and with a push button switch such that the electronics package electrically actuates the solenoid responsive to the operator.

Locate hole

engaging the push button switch. In this way, a highly advantageous and convenient control configuration is provided. That is, the operator need not even change hand positions in order to initiate marking. Applicants respectfully submit that the art of record is devoid of this feature in any reasonable combination, as will be further discussed.

Claim 15, as amended, is an independent claim which reflects certain detailed limitations discussed above with respect to the patentability of claims 1-14 over the art of record. In particular, a portable locator includes a ground marking arrangement that is configured for emitting an aerosol paint. An electronics package is configured for performing an inground locating function and is interfaced with a push button switch that is located for finger actuation by an operator. A predetermined actuation of the push button switch causes the electronics package to drive the solenoid which then results in paint emission. It is submitted that claim 15 is patentable at least for the reasons set forth above with respect to these limitations, as embraced by claims 1-14 and discussed above.

Dependent Claims 16-19 are each either directly or indirectly dependent from and therefore include the limitations of claim 15. Accordingly, it is respectfully submitted that each of these claims is also patentable over the art of record for at least the reasons set forth above with respect to Claim 15. Further, each of these dependent claims places additional limitations on their parent and intermediate claims which, when considered in light of Claim 15, further distinguish the claimed invention from the art of record.

Activation broad

For example, claim 17, additionally requires electronically monitoring operator interactions of the push button switch for the predetermined operator actuation to control the marking arrangement and for the other operator actuations for controlling the locating arrangement. Accordingly, operator interactions that are intended for controlling locating functions are electronically distinguished from the operator interaction that is intended to initiate ground marking. In attempting to meet these features, and as discussed above with regard to the amendment of claim 1, the Examiner refers to an LCD display 22 of Rodgers. Accordingly, the arguments made above with respect to the patentability of amended claim 1, in consideration of these features, are equally applicable with respect to the patentability of claim 17. For example, the Examiner appears to equate the mere display of operational status as equivalent to monitoring operator interactions, even though the description in Rodgers is specifically limited to display of operational status. In contrast, the operator of the apparatus of the present invention actually influences the operation of the apparatus to determine process outcome. As another example, Rodgers specifically teaches that actual operator control of his apparatus is to be

avoided in order to eliminate operator induced marking errors. Accordingly, for at least these reasons, allowance of claim 17 over the art of record is respectfully requested.

*Still use why
ra Primary trigger*

Additional limitations are added by claim 19 the electronics package monitors the switch for the predetermined operator actuation as a sequence of closing the switch twice in timed succession and then holding the switch closed. These limitations are not merely directed to monitoring process parameters, as in Rodgers, but rather to selective operator-initiated control of different portions of the apparatus. The spirit of Rodgers is to eliminate operator dependent control. Applicants find no teachings in the art of record with respect to such a control implementation.

Amended claim 20 is an independent claim which recites a method for fabricating a portable device. The method includes the steps of configuring a housing arrangement to define a first operating position and to define a second operating position. A locating arrangement is supported at the first operating position and a ground marking arrangement is supported at the second operating position such that the locating arrangement and the ground marking arrangement in the first and second operating positions, respectively, cooperate for use by an operator in identifying a location on the surface of the ground relative to at least one of a buried line and a boring tool. The operator then may use the marking arrangement to mark the location. Further, claim 20 has also been amended in a way which is consistent with regard to the amendments made in claim 1, and to now include the limitations of canceled claim 23, wherein an electronics package is used to distinguish between operator interactions for operating the locating arrangement and a predetermined operator interaction for initiating ground marking. For these reasons, the arguments made above with regard to patentability of claim 1 over the art of record, with respect to these various limitations are equally applicable with respect to the patentability of claim 20 over the art of record. Accordingly, for at least these reasons, allowance of claim 20 is respectfully requested.

Dependent Claims 21, 22, and 24-30 are each either directly or indirectly dependent from and therefore include the limitations of Claim 20. Accordingly, it is respectfully submitted that each of these claims is also patentable over the art of record for at least the reasons set forth above with respect to Claim 20. Further, each of these dependent claims places additional limitations on their parent and intermediate claims which, when considered in light of Claim 20, further distinguish the claimed invention from the art of record.

For example, claim 21 recites configuring the housing arrangement using the steps of forming a first housing portion and a second housing portion, positioning the locating arrangement within the first housing portion, and positioning the ground marking arrangement within the second housing portion. Claim 22 provides additional limitations by adding the step of hinging the first housing portion to the second housing portion for movement of the first and second housing portions between an operational configuration for use by said operator and a compact configuration for at least one of transport and storage. In attempting to meet this combination, the Examiner references a handle which is hinged to the body of the Rodgers apparatus. Applicants respectfully disagree. The configuration of Rodgers fails to meet the claimed combination at least for the reason that the hinge is not interposed between its ground marking arrangement and laser transceiver arrangement.

Claim 24 adds the step of configuring the electronics package to monitor a switch for the predetermined operator actuation and the other operator actuations. It is noted that this feature is considered to be highly advantageous by Applicants at least for the reasons given above with respect to the patentability of claim 17 over the art of record. For example, the operator to need not move his or her hand in order to initiate marking. As a further advantage, by selecting an actuation that is compatible with previously employed locating function actuations, the operator may continue to use a pre-existing locator actuation command set. Accordingly, for at least these reasons, allowance of claim 24 over the art of record is respectfully requested.

Additional limitations are added by claim 25 wherein the step of arranging the electronics package uses the electronics package to monitor the switch for the predetermined operator actuation as a sequence of closing the switch twice in timed succession and then holding the switch closed. These limitations are not merely directed to monitoring process parameters, as in Rodgers, but rather to selective operator-initiated control of different portions of the apparatus. The spirit of Rodgers is to eliminate operator dependent control. Applicants find no teachings in the art of record with respect to such a control implementation.

Claim 31, as amended, is an independent claim directed to limitations which include arranging an electronics package for monitoring operator actuations of the portable device (i) to detect a predetermined operator actuation for use in controlling the marking arrangement, (ii) to detect other operator actuations for use in controlling the locating arrangement, and (iii) to, upon detecting the predetermined operator actuation, initiate marking by the marking arrangement. Accordingly, amended claim 31 reflects certain features that are present in amended in claim 1 which are

considered as patentable over the art of record, as argued above, with respect to the patentability of claim 1. For this reason, these arguments are asserted in behalf of the patentability of claim 31. For example, with respect to this combination of features, Rodgers is relied on as teaching an LCD process monitor screen. Applicants disagree, as set forth above, and respectfully submit that claim 31 is allowable at least for the reason that the art of record, in any reasonable combination, fails to teach, disclose or suggest, operator initiated control of the locating and marking functions, as contemplated by the present invention.

Dependent Claims 32 and 33 are each either directly or indirectly dependent from and therefore include the limitations of claim 31. Accordingly, it is respectfully submitted that each of these claims is also patentable over the art of record for at least the reasons set forth above with respect to Claim 31. Further, each of these dependent claims places additional limitations on their parent and intermediate claims which, when considered in light of Claim 31, further distinguish the claimed invention from the art of record.

For example, Claim 32, as amended, adds the step of monitoring a switch for the predetermined operator actuation and for other actuations while amended claim 33 recites the predetermined actuation as a sequence of closing the switch twice in timed succession and then holding the switch closed. Having argued for the patentability of these features above, such arguments are equally applicable with respect to the patentability of claims 32 and 33, and are hereby asserted in their behalf.

Claim 34, as amended, is an independent claim which recites a method for manufacturing a portable device. A locating arrangement is supported in one operational orientation in a housing arrangement and is configured for actuation by an operator to locate at least one of a buried line and a boring tool. A ground marking arrangement is supported in another operational orientation for actuation by the operator to mark the ground. Further, claim 34 has been amended in a way which is consistent with the amendments made in claim 1 wherein an electronics package is used to distinguish between operator interactions for operating the locating arrangement and a predetermined operator interaction for initiating ground marking. For these reasons, the arguments made above with regard to patentability of claim 1 over the art of record with respect to these various limitations, now seen in claim 34, are equally applicable with respect to the patentability of claim 34 over the art of record. Accordingly, for at least these reasons, allowance of claim 34 is respectfully requested.

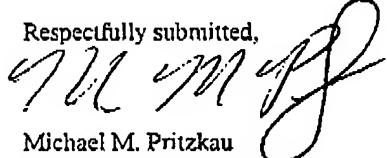
Dependent claims 35-37 are each either directly or indirectly dependent from and therefore include the limitations of claim 34, as amended. Accordingly, it is respectfully submitted that each of these claims is also patentable over the art of record for at least the reasons set forth above with respect to amended claim 34. Further, each of these dependent claims places additional limitations on their parent and intermediate claims which, when considered in light of claim 34, further distinguish the claimed invention from the art of record.

For example, claim 36 further requires that the step of arranging the electronics package includes the step of configuring the electronics package to monitor a switch for the predetermined operator actuation and the other operator actuations. Still further, claim 37 recites that the step of configuring the electronics package customizes the electronics package to monitor the switch for the predetermined operator actuation as a sequence including closing the switch twice in timed succession and then holding the switch closed. Applicants have addressed these features above with respect to the patentability of various ones of the claims over the art of record. Accordingly, these arguments equally favor the patentability of claims 36 and 37 over the art of record and are hereby asserted in their behalf.

For all of the foregoing reasons, it is respectfully submitted that all of the Examiner's objections have been overcome and that the application is in condition for allowance. Hence, Applicants respectfully request allowance of the claims under immediate consideration, and passage to issue of the application are solicited.

Should the Examiner believe that a telephone conference would expedite the prosecution of this application, the Examiner is requested to contact the undersigned.

Respectfully submitted,



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